

taplint: **TAP** validator tool

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# taplint

## TAP validator

- Intended for use by TAP service developers
  - ▷ Point it at your service, it tells you what's not compliant
- Part of STILTS
  - ▷ Download from <ftp://andromeda.star.bris.ac.uk/pub/star/stilts/pre/stilts.jar> (*current STILTS public release version 2.3-1 has a few errors*)
  - ▷ Documented at <http://www.starlink.ac.uk/stilts/sun256/taplint.html>
- Tries to test lots of things
  - ▷ Many protocols involved:
    - TAP, UWS, VODataService, ADQL, VOResource, VOSI, TAPRegExt, VOTable, HTTP, ...
  - ▷ Performs ~ 200 *different* tests
  - ▷ ... but not comprehensive
- Developed with help from TAP people (Tom McGlynn, Markus Demleitner, ...)
- Pointed up some TAP/UWS/etc issues, see [TAPImplementationNotes](#) wiki page

# Example

```
% stilts taplint http://example.com/tap
```

```
Section TMV: Validate table metadata against XML schema
```

```
I-TMV-VURL-1 Validating http://example.com/tap/tables against http://www.ivoa.net/xml/VODataService/VODataServ...
```

```
E-TMV-URBH-1 (1.2, c.178): cvc-elt.1: Cannot find the declaration of element 'vos:tableset'.
```

```
E-TMV-BBUE-1 (1.889, c.58): cvc-complex-type.2.2: Element 'dataType' must have no element [children], and the ...
```

```
E-TMV-BBUE-2 (1.893, c.58): cvc-complex-type.2.2: Element 'dataType' must have no element [children], and the ...
```

```
E-TMV-BBUE-3 (1.897, c.58): cvc-complex-type.2.2: Element 'dataType' must have no element [children], and the ...
```

```
E-TMV-BBUE-x (1817 more)
```

```
S-TMV-VALI-1 warnings: 0, errors: 1818, fatal: 0
```

```
Section TMS: Check content of tables metadata from TAP_SCHEMA
```

```
I-TMS-QSUB-1 Submitting query: SELECT principal, indexed, std, "size" FROM TAP_SCHEMA.columns
```

```
I-TMS-QGET-1 Query GET URL: http://example.com/tap/sync?REQUEST=doQuery&LANG=ADQL&QUERY=SELECT+principal%2C+in...
```

```
E-TMS-RRES-1 TAP response document RESOURCE element is not marked type='results'
```

```
E-TMS-CERR-1 Error reading TAP_SCHEMA.columns data [IllegalArgumentException: Column ["size"] does not exist.]
```

```
. . .
```

## Notes on output:

- `grep`-friendly
- Human readable
- Manageable length (repeated messages filtered out)
- *Tries* to give as much info as possible
- Logs queries as well as reporting errors where possible/practical to aid reproducibility
- Options for truncating long lines, filtering messages, restricting tests, etc

# Tests

## Tests performed:

- TMV:** Validate /tables endpoint against VODataService schema
- TME:** Check content /tables endpoint for consistency
- TMS:** Check form and content of TAP\_SCHEMA tables
- TMC:** Compare table metadata from /tables and TAP\_SCHEMA
- CPV:** Validate /capabilities endpoint against TAPRegExt schema
- CAP:** Check content of /capabilities endpoint
- AVV:** Validate /availability endpoint against VOSI schema
- QGE:** Make example ADQL queries in sync GET mode
- QPO:** Make example ADQL queries in sync POST mode
- QAS:** Make example ADQL queries in async mode
- UWS:** Test asynchronous UWS/TAP behaviour
- MDQ:** Check table query result columns against declared metadata
- UPL:** Make example queries with table uploads

## Coming up:

- OBS:** ObsCoreDM data model

# Capabilities

## ● Strengths:

- Job submission tests (synchronous, asynchronous, UWS job control)
- Tests all columns in all tables
- Metadata tests (consistency between TAP\_SCHEMA & /tables)
- Basic ADQL syntax (column quoting, requested columns output etc)
- TAPRegExt record tested (current WD) if present
- Output VOTable syntax checked carefully (`votlint`)

## ● Weaknesses:

- Not very complicated ADQL queries
  - ▶ No geometry, no STC, no ObsTAP (*yet*)
- ADQL-like queries only (no PQL)
- Tests only service, not registration
- Probably has bugs!

# Summary

## STILTS `taplint`

- If you're developing a TAP service, consider using it!
- Talk to me if results don't make sense (or look wrong)
- May get extended/corrected/improved, depending on demand